Risk assessment and climate change : The in-built problems of Commission policy

When parallax fallacies emerge from institutional knowledge, risk and time management

Jonas Dreger

Abstract

Keywords *: European Commission, climate policy, risk management, sociology of risk, EU timescape*

This article provides an analysis of institutional biases - in other words, 'parallax fallacies' - in the European Commission's risk management system. Building on sociological understandings of risk and the recent EU timescape approach in EU studies, we identify six potential fallacies: 1) a misrepresentation or underestimation of risk, 2) an unrepresentative estimation of risks, 3) normatively contestable estimations of risk, 4) an institutionally or functionally limited view on risk, 5) a blurred focus on the political aspect of the risk due to risk transformation, 6) a time-lagged risk assessment. These fallacies are evaluated with regard to the 2° Celsius target of the Commission's climate change policy.

Mots clés : Commission européenne, politique sur le changement climatique, gestion des risques, sociologie de risque, EU timescape

Cet article offre une analyse des biais institutionnels – autrement nommés *parallax fallacies* – dans le système de gestion du risque de la Commission européenne. S'inspirant à la fois des approches sociologiques du risque et des récentes analyses politologiques de l'UE prenant en compte le facteur temps (*EU timescape*), le texte identifie six biais : 1) une fausse représentation ou une sous-estimation du risque, 2) une représentation du risque non représentative, 3) des estimations du risque contestables normativement, 4) une estimation du risque limitée fonctionnellement ou institutionnellement, 5) un focus inexact sur l'aspect politique du risque dû à la transformation de celui-ci, 6) une évaluation du risque plombée par le décalage chronologique nécessaire à l'élaboration de la

norme. Ces problèmes sont évalués ici dans le cas de l'objectif 2° Celsius de la politique de changement climatique de la Commission européenne.

Introduction

This article focuses on the European Commission because it is at the centre stage of the development of the European Union's (EU) policy development. For students of EU politics, policies, and polity, the Commission represents an increasingly better understood yet under-researched fascinating unit of analysis. The Commission has the right of legislative initiative and can therefore set a path-dependent process in motion. Interestingly enough, large parts of a Commission proposal for a directive remain unchanged when debated and adopted via the community method (Hull 1993 : 83). Often, the general legislative framework remains untouched in the interinstitutional bargaining, whereas details are bargained about. At the same time, the adoption of a proposal is very likely once the proposal for a directive has left the Commission (Mahoney 2008: 25). Additionally, the Commission is the "guardian of the 'European clock' " which ensures legislative consistency over time and facilitates the decision-making process (Tholoniat 2009 : 221f.).

The focus on climate change has been chosen because it, firstly, constitutes one of the most pressing policy problems the EU has faced during the Barroso Presidency of the European Commission. The EU has adopted an array of measures, the latest in December 2008 with the so-called climate package, including the revision of the Emissions Trading Scheme Directive, as well as, amongst others, directives on renewable energy, biofuels, and carbon capture storage. Shortly after the end of the first term of José Manuel Barroso, the EU will engage with its international counterparts to negotiate a follow-up agreement for the Kyoto Protocol. Secondly, climate change is a prime example of risk management. The climate policy of the EU rests on the assumption that controlling the increase of global temperature by maximally 2° Celsius would represent acceptable risks with regard to the consequences of climate change.

In accordance with the objective of this edition to provide academic cutting-edge research informed by the practical insights gained by its authors, this paper aims at shedding some light into the institutional biases which can be traced down in the Commission's policy management emerging from the 2° Celsius assumption. The different biases can be compared with the 'conceptual parallax' which can be found in research designs. The term parallax originates from photography and describes

"an apparent displacement of an object due to an observer's position" where a "relatively slight and apparently inconsequential difference in viewpoint … can, over time and distance, displace the perception of the object of attention. … The photographer may have to make adjustments in focus to compensate for parallax. Failure to do so may result in a photograph that misses or partially cuts off the intended object of the photograph." (Caldwell 1996: 402)

Caldwell calls this assumed certainty, which leads to biased conclusions; the 'parallax fallacy' (Caldwell 1996: 402). He believes that this fallacy leads to errors of conceptualization of a problem or method of investigating the problem (Caldwell 1996: 405). This paper would like to take the 'parallax fallacy' further when it argues that the management of risk, time and knowledge can lead to a biased policy. The Commission accounts for some of these parallax fallacies, and for some of these only partly.

Concretely, there are four implications of the risk management in the case of the 2° Celsius target which bear considerable implications: Firstly, the target has been set on the basis of expert knowledge. Secondly, the target represents a risk calculation. Thirdly, the target represents a decision made at a particular time. With regard to all three aspects of the 2° Celsius assumption, the Commission is, fourthly, caught in its transvestite nature of being a problem-solving yet political institution. Between 'puzzling' and 'powering' (Hugh 1974: 305f.), the Commission attempts to merge two dynamics which at times lead to a trade-off: A perfect solution of a problem might not be politically acceptable whereas a politically acceptable solution might not solve the problem (completely).

In the case of the EU's climate policy, the 2° Celsius target is politically accepted, but expert contestation mounts. The judgement call about the 2° Celsius target will be made later in history. Nevertheless, this paper would like to take the climate policy as a case in point to shed light into inbuilt institutional biases of the Commission, which influence policy choices based on risk and knowledge management. Insofar, this paper aims at informing the academic debate about knowledge and policy learning from an institutionalist point of view. At the same time, it aims at improving the understanding of the practitioner in EU policy making about inbuilt tendencies of decision-making.

The paper's analysis is structured along the following lines: Firstly, sociological approaches and the recent turn to time in EU politics analysis will be taken as a starting point to develop potential accounts of institutional pitfalls to risk management in the Commission. Secondly, the Commission's efforts to tackle these biases are introduced and put into context. Thirdly, the 2° Celsius target will be taken as an illustration of the practical implications of the institutional biases. A conclusion will summarise the paper and point at further avenues for researchers who would like to continue research on risk management in the Commission.

2.1. Five institutional parallax fallacies derived from sociological approaches to risk

Climate change is a risk with a multitude of dimensions. Such a risk represents a significant challenge for policy makers. In the following, sociological understandings of risk shall be employed to exemplify the challenges the Commission faces in managing risks – and especially modern risks such as climate change. Before doing so, a short re-

view of the different understandings of 'risk' in systems theory, risk society, and governmentality approaches is necessary.

'Risk' as a term is said to derive from the Latin term risco, a navigational term for sailors, which was used as "a synonym for danger or peril, for some unhappy event which may happen to someone" (Ewald 1991: 199). 'Risk' as a concept, however, has been defined very differently by varying approaches. Sociological approaches to risk have often conceptualized it as opposed to uncertainty. The governmentality literature understands risks as "statistical predictions of the future" as opposed to uncertainty which would derive its expectations of the future in non-probabilistic ways (O'Malley 2008: 72). Beck shares this understanding with the governmentality literature, but for the latter, risk is a governance technique, whereas risk for Beck has a much broader meaning: he attributes the production of risk to the production of wealth in modernity. Beck's risk society uses risk as a major analytical device for understanding modernity.

Luhmann (1993: 19ff) rejects the opposite pair of risk and safety on the grounds that both of them are subject to differing degrees of uncertainty and suggests using the distinction between risk and danger. Risk thereby becomes a question of attribution, not certainty: "Risk implies that the cause of possible damage is attributed to the system itself [and decisions made therein], whereas danger refers to the external attribution of a cause for possible damage." (Japp and Kusche 2008: 88) Systems theory therefore attributes risk to decision making.

Beck's risk society understands risk as "a material or symbolic … harm, or an alleged negative future event" (Zinn 2008b: 173) whereas systems theory defines risks more exclusively as inherent in any decision, socially constructed and then attributed – risk is understood as an "attribution of an undesired event to a decision" (ibid: 178). Different approaches to risk therefore show clearly that risk can be understood as a real harm, a symbolic harm, as a socially constructed and attributed harm. We will come back later to the implications of the attribution of risk. Whereas the governmentality approach is too limited in its understanding of risk as a statistical governance tool, the following analysis will employ concepts of both Beck's risk society and the systems theory approach to shed light into the risk management of the Commission.

Without attempting to assess the historical correctness of Beck's distinction between traditional and modern risks, climate change fits very neatly with his description of a modern risk. Risk, according to Beck, is produced as a by-product of modernity (Beck 1992: 19). Climate change is, at least partly, caused by greenhouse gases like carbon dioxide, which are by-products of industrial development. Climate change is thus – at least partly - created by the practices of "people, firms, state agencies and politicians" (Beck 1992: 98). Other than a natural hazard, a manufactured risk such as climate change is not geographically limited. Its border transcending character makes it an inescapable problem (Beck 1992: 21-3). The traditional insurance regimes are unable to cope with the scope and the unattributable causes of risks (Mythen 2004: 22-3) like climate change. This is a case of market failure: the markets produce risks, which are not

priced in the products they sell or in their production calculations. Yet, climate change has potentially catastrophic impacts which mankind has imposed on itself (Beck 1995: 83). The Commission, as the legislative initiator of the EU, cannot escape this challenge. It has to find answers to an inescapable problem, which is magnified by a market failure to solve it. In this sense, the Commission does not control whether or not to face the risk of climate change.

The definition of risks by an institution implies the establishment of acceptable levels of risks. These thresholds are legitimized by science. Here, and in relation to the risk literature mentioned, the first three institutional challenges become visible: 1) underestimation or misrepresentation of risks, 2) unrepresentative estimation of risks or 3) normatively contestable estimations of risk.

Firstly, climate policy "can only be thought of in terms of scientific knowledge." (Dreger 2008: 30). Like other modern risks, it is abstract on a time dimensions as it can occur with a severe time lag of several decades or generations (Beck 1999: 143). It is also abstract because CO_2 is an imperceptible risk factor. Climate change has to be mediated and explained by science simply because it is abstractly and "indeterminately distanciated over space and time" (Bulkeley 2001: 432). In the explanation of risks, it becomes apparent, as established by Beck, that risks are both real and constructed. They exist as hazards, yet at the same time they are conceptualized in what Beck calls 'relations of definitions', that is by rules, institutions and other capacities with a structural impact (Beck 1999: 149). Concretely, climate change exists and its existence is conceptualized in an interaction of political institutions like the Commission with the scientific community and other actors of risk definition. Interestingly, science is losing its monopoly to define risks because the principles of modernity are directed against its own institutions as well (Beck 1992: 29). Beck calls this development 'reflexive scientization', that is, science is not trusted anymore to provide objective knowledge: "The application of scientific principles to itself discovers the implicit normativity, uncertainties, and limits of knowledge production." (Zinn 2008a: 22-23) Business and civil society actors contest expertise on climate change. The Commission's attempts to provide for transparency and openness even increase this phenomenon in the EU's policy making.

In such a context, science is only accepted as a legitimizing tool if it can prove the risk beyond doubt, even though "scientific methods more often yield probability than certainty." (Caldwell 1996: 396) Hence, scientific actors might be tempted to present only conservative risk estimations, which they can prove beyond or with little doubt. The Commission would then base its risk assessment and the consequent policy on an estimation that underestimated the real risk. In another scenario, experts might feel the need to present only parts of the evidence to provide for a coherent picture. This, in turn, would lead to a misrepresentation of risk in the risk assessment of the Commission. The second case might also emerge as a result of a deliberate or unconscious selection bias in the consulted experts. Also, in case a political goal is agreed upon, the tendency to "assume certainty where it does not exist may be expected" (ibid: 396),

both by the scientists and even more so by politicians. This is especially the case, because the European political and legal culture expects a degree of certainty in the formulation of policies (ibid.)

Secondly, the conceptualization of risk also differs depending on the background of the conceptualizing actor. Experts tend to balance costs and benefits, whereas lay people are influenced more by the potential impacts than their probability: With regard to nuclear power, Chernobyl has shown that lay people would reject a cost-benefit analysis as such if the potential impacts were expected to be severe (Starr 1969). It therefore depends on the groups consulted whether the Commission's risk assessment resembles the risk assessment of the people its policy is supposed to represent. As the Commission tends to consult only experts, interest groups and officials from other institutions, a bias in the risk assessment is at least possible.

Thirdly, the Commission's risk management can be normatively contested. Beck has put forward the notion of 'organized irresponsibility', which is built on the assumption that institutions at the same time recognize a risk and attempt to reduce public concern (Beck 1995: 61), especially by establishing acceptable levels of risk. According to Beck, risks are "produced by industry, externalized by economics, individualized by the legal system, legitimized by the sciences and made to appear harmless by politics" (Beck 1998: 16). This paper would not like to confuse risk management and risk communication – but Beck does point his finger to the interesting fact that institutions like the Commission need to work with acceptable risk levels to develop meaningful policies. By establishing thresholds of acceptable risks, the Commission makes normative decisions. Risk management is not anymore a question of risk avoidance but of risk control. The normative questions of the acceptability of risk come to the forefront when it comes to the distribution of 'bads' instead of 'goods' (Beck 1992: 58). The Commission is caught in a highly political exercise of balancing political preferences regarding acceptable risk thresholds. Whatever threshold the Commission will chose it will always be subject to contestation by groups whose opinion it has disregarded or not consulted.

Fourthly, an institutionally or functionally limited focus on the problem can emerge. Systems theory contributes in the same vein of the aforementioned institutional challenges derived from Beck's risk society but it brings the nature of the decision-making system clearly to the fore. As every decision-making in systems theory is understood as contingent, risk is subject to the "self-referentiality of a functionally differentiated system." (Japp and Kusche: 81) Notions of validity, criteria of assessment, preferences or procedures in accordance with the functions of a system might lead to a bias in the risk assessment. Systems theory "interprets risk against the background of the functional differentiation of society. It sees risk conflicts as problems of the different logics of autonomous but structurally coupled systems" (Zinn 2008b: 203). The institutionalist logic assigns different interests to different institutions: whereas business analyses a risk through the lens of profit maximization, environmental NGOs look at a risk from the perspective of environmental protection. The Commission would then be expected to

analyse risk through the lens of its own institution, not necessarily through a broader, more encompassing lens. Path-dependent decisions to stick with earlier risk assessments or other notions of risks such as a political risk could blur the risk assessment.

Fifthly, systems theory informs us about a bias derived from risk transformation. Systems theory understands risks as unknown consequences in the future of decisions made today. Risk becomes the way of "observing time" because "[d]ecisions make the difference of time visible". (Japp and Kusche 2008: 85)[11] 'Post decisional regret' becomes inevitable because of the aforementioned contingency and nature of risk (ibid: 86). This paper will elaborate on this aspect later in the next section. For now, it might be sufficient to say that the Commission, by devising policy on climate change, takes over risks: It decides although the decision might be wrong in the future, and it decides although knowledge about climate change is constantly evolving. Acting tough on climate change now is politically as risky as it is to act soft on climate change: in the unknown future both pathways of action can turn out to be wrong. (Krücken 1997: 131) Thus, the economic and social risk climate change becomes a political risk for the institution as well. This form of risk transformation complicates matters for the Commission significantly.

To summarize, five institutional biases to risk assessment and management could emerge within the Commission: 1) a misrepresentation or underestimation of risk, 2) an unrepresentative estimation of risks, 3) normatively contestable estimations of risk, 4) an institutionally or functionally limited view on risk, 5) a blurred focus on the political aspect of the risk due to risk transformation. In the following section, a sixth institutional bias following from time aspects is introduced separately.

2.2. The sixth parallax fallacy of time-lag

A recent special edition of the Journal of European Public Policy has argued for accounting better for the influence of time in European politics. Time, it is put forward, is an "institutional property" (Goetz and Meyer-Sahling 2009: 181) which structures the outcome of politics. Sequence, duration, cycles, temporal consistency are but a few features of time, which make it a political resource. The inherent parallax fallacy related to the institutional time of the EU shall be exemplified by shortly introducing the decision-making process with a special view on its time dimension.

Time represents resources for the Commission which allow it to serve as an agenda-setter, building block and as a broker. (Tholoniat 2009: 222-4). On the basis of the

[11] The governmentality approach would even say that to "calculate a risk is to master time, to discipline the future." (Ewald 1991: 207)

Commission's White Paper on Administrative Reform 2000, the White Paper on European Governance 2001 and the better law-making initiative 2002, the Commission has developed its mechanisms of time management: Strategic Planning and Programming cycle (SPP), Commission's Legislative and Work Programme (CLWP) and the Annual Policy Strategy (APS). In most policy fields, the Commission publishes so-called Action Plans, which often span time periods of seven to ten years. The SPP makes sure that legislative initiatives are announced on average 12-24 months before their adoption, to give time for external participation before they are included in the annual policy cycle for the forthcoming year (Tholoniat 2009: 228-30).

Normally, the Commission prepares the ground for a legislative proposal with several preparatory papers, which it publishes to collect external input along the process. A Green Paper sets out the policy options, often on the basis of commissioned impact assessments. After having started a consultation process on the Green Paper, the Commission will circulate a first draft of the Directive within the institution. So-called "non-papers" might also leave the institution more or less informally during this stage. At the end of the interservice negotiations within the Commission, the legislative proposal for a directive is published and passed on to the Council of Ministers and the European Parliament. The Commission also publishes impact assessments alongside their legislative proposals. They provide insights into the economic, social and environmental impacts of the potential directive and facilitate policy choices within the Commission services. Their preparation takes between 6-12 months (Tholoniat 2009: 231). The entire process of preparing a legislative proposal therefore takes mostly at least two years, in many instances longer.

After the publication of the proposal, the institutional bargaining between Council, Parliament and Commission begins. The decisional cycle is influenced by the electoral cycle and the political time budget, which it attributes to the decision-makers (Goetz and Meyer-Sahling 2009: 185). Time can also be manipulated, and there are various factors, which influence how, for instance, the Commission times the publication of the proposal (Kovats 2009); or when the decision-making dynamics are speeded up or delayed (Goetz and Meyer-Sahling 2009; Héritier and Farrell 2004, Héritier 2007 on early decision making). The normal adoption process varies according to the degree of consensus. Between May 1999 and December 2006, 564 files have been concluded with the codecision procedure. 38.5% of the files were 1st reading agreements, which on average took 13.7 months. 44.1% of the directives were 2nd reading agreements, which took on average 26.5 months to conclude. 17.4% of the files were only agreed upon in conciliation, which took on average 33.7 months (http://ec.europa.eu/ codecision/institutional/analysis/codecision_ stat_en.pdf, April 2009). The current trend seems to move towards more 1st reading agreements but an increase in time of the negotiations (ibid.). The official decision-making procedure therefore takes between a good year and nearly three years, with more than a half of the debates taking longer than on average 2 years.

In addition, the adaptation of a proposal does not equal its implementation:

> "The key issue along the policy dimension is then: when, in what sequence, how quickly and for how long are benefits to be provided and costs to be imposed? When should a new directive come into force? In what sequence should EU measures for combating climate change be implemented and what is the appropriate time scale for action? How quickly should transitional arrangements be phased out? How long should a temporary derogation last? Time rules are thus applied as tools of governance." (Goetz and Meyer-Sahling 2009: 189-90)

It is for this reason that Wettestad (2005) has pointed out how a quick adoption impacted the quality and the decision-making dynamics of the first Emissions Trading Scheme directive in 2003. In his eyes, the adoption (and implementation) within 2 years could be termed as an "ultra-quick political pregnancy" (Wettestad 2005).[12]

Due to business cycles and other deliberations, temporary derogations and transitional arrangements can easily span an additional decade. Also, after the legislation has come into force completely, compliance still needs to be ensured.

Although Goetz and Meyer-Sahling claim that EU policy is more time consistent and better at distributing costs over time than national policy (2009: 191), the policy which is eventually in place can suffer from a time-lag of 2-16 years: a Commission internal time-lag of 1-3 years, a decision-making time-lag of 1-3 years and an implementation time-lag of up to 10 years. This institutional bias is particularly worrying in a field such as climate change, which experiences scientific updates regularly. Policies on the basis of consensual data from year x might be considered sufficient in the particular years of policy preparation but might be clearly insufficient by year x+n when the policy is adopted or implemented.

3. The Commission's risk management mechanisms

Before turning to the 2° Celsius target, the Commission's risk management mechanisms shall be shortly introduced and set into perspective with a view to the identified institutional biases. The Commission has publicly noted that it sees a need to account for the fact that "society has become less tolerant towards risks" (Commission 2000b: 11). Insofar, it does recognise some of the potential pitfalls mentioned above. It was in particular responsive to the potential political contestation of its policies and the possibility of misunderstanding a certain risk. It has developed a three-step risk strategy, consisting of risk assessment, risk management and risk communication (Commission

[12] He in particular argues that one policy proposal in itself is often preceded by failed proposals before, which should be taken into the calculus (ibid.).

2000a: 8). Risk assessment consists of hazard identification, hazard characterisation, appraisal of exposure, and risk characterisation (ibid: 14). Risk assessment, according to the Commission, does not need to restrict itself to only quantifiable data but can also be informed by qualitative scientific data (ibid: 12).

In establishing the risk assessment, the Commission's objective is to build on "socially robust" knowledge - knowledge, which was subject to an "extended peer-review" not only from the scientific community but also from stakeholders, civil society and those possessing local or practical knowledge. (Commission 2001a: ii) This approach emanates from the acknowledgement that expertise is increasingly contested and politicised. From this fact, the Commission drew the conclusion that expertise needs to be democratised, i.e. to extend the "traditional procedures for assessing quality" without sacrificing its quality (ibid: 7). Insofar, the Commission explicitly tackles that its risk analysis may be victim to the parallax fallacy of not being representative. At the same time, it runs a risk of accepting a trade-off between increased participation and decreased quality of the result.

Whereas the Commission has been very careful to develop guidelines, which ensure the independence of advice (or a clear attribution of advice to interests), as well as transparency and openness of the process (Commission 2003), such an undertaking creates an institutional overload. The Commission organises expert hearings and consultations and has committed itself to a transparent governance process because the quality of "EU policy depends on ensuring wide participation throughout the policy chain – from conception to implementation" (Commission 2001b). Due to the strained administrative capacity of the Commission, there is an overload of information and administrative obligations in organising this information. A structural bias reinforcing the parallax fallacy of underestimating risks could easily emerge; which disables the Commission to realise that incoming information by stakeholders, lay experts and civil society blurs the message of scientists, which warn of potential consequences of a problem.

Because risks can be underestimated, the EU's environmental policy is committed to the precautionary principle and the principle of preventive action (Art. 174 2, Treaty Establishing the European Community). The same principle is enshrined in international treaties on the environment, for instance in the United Nations' Framework Convention on Climate Change (Art. 3.3). In its communication on the precautionary principle, the Commission sets out the principles of precautionary measures and its application guidelines. The Commission understands the precautionary principle as a mechanism of risk management with inherent political responsibilities, which should be applied when "potentially dangerous effects deriving from a phenomenon, product or process have been identified" whereas "scientific evaluation does not allow the risk to be determined with sufficient certainty." (Commission 2000a: 3-4) Precautionary measures should be proportional, non-discriminatory, consistent, based on a cost-benefit analysis, subject to review and based on comprehensive risk assessments. (ibid: 4) The

Commission is very clear in defining the "appropriate response in a given situation [… as] the result of an political [sic!] decision, a function of the risk level that is "acceptable" to the society on which the risk is imposed." (ibid: 16) This function of acceptable risk should be established on the basis of the "latest knowledge" (Commission 2000b: 12). The Commission is, however, dependent on the political decision of actually evoking the precautionary principle. Additionally, the inclusion of constantly to be updated 'latest knowledge' slows down the internal decision-making. This efficiency problem is solved with a hesitancy to include new knowledge the longer the proposal has been debated within the institution. In that sense, the attempt to solve the parallax fallacy of underestimating risks via the precautionary principle has led to an increased danger of producing normatively contestable risks estimations.

The evaluation of risk management options consequently includes considerations of cost-benefit analysis, social perception and acceptance of risks, and the administrative feasibility of the options (ibid: 24). Such evaluation criteria are obviously subject to political considerations. The cost-benefit analysis in the Commission is made on the basis of impact assessments, at the latest since 2003. Impact assessment, as understood by the Commission is the "process of systematic analysis of the likely [economic, social and environmental] impacts of intervention by public authorities" (Commission 2002: 3) and should inform decision making, but not substitute political judgement (ibid.). Impact assessments are preceded by a preselective assessment of options and factors to assess, and concluded before the proposal for a directive enters the inter-service consultations (ibid). Impact assessments normally offer arguments for a preferred policy option and explain alternative options and their implications. The Commission has a preference for quantified impact analysis but acknowledges that cost-benefit analysis may not always provide all relevant information – impact assessments thus should take into account the precautionary principle, questions of irreversibility, different time horizons and distributive effects (ibid: 16) Impact assessments, in this sense, contribute to reducing the normative contestability and the institutionally limited view on risk.

To conclude this section, the Commission has various mechanisms in place which should ensure that its risk assessment is both representative of the facts and of public opinion: expert consultation, stakeholder consultation, impact assessments and internal procedures to ensure the correct usage of the mechanisms of risk assessment. The Commission does suffer, however, from an institutional overload at times. Risk assessment has been turned into a more political exercise by the Commission, which might quickly impact the accuracy of the assessment. It seems that the parallax fallacies related to factual misrepresentation of risk have been extensively tackled, but the fallacies related to political aspects have only seen improvements on the participatory dimension; without necessarily solving the risk transformation and the normative contestability problem. The time dimension has not been institutionally accounted for, despite rhetorics on the necessity to always include the most recent knowledge.

4. The 2°Celsius target as an illustration of the parallax fallacies

In the following, it shall be assessed whether the safeguards and mechanisms of the Commission to ensure a good risk management are sufficient despite the identified potential biases. As a point in case, the 2° Celsius target in climate policy has been chosen because it represents the foundation of the EU's climate policy in the last decade.

The 2° Celsius target was first agreed upon by the Council of Ministers in 1996: "the Council believes that global average temperatures should not exceed 2 degrees above pre-industrial level and that therefore concentration levels lower than 550 ppm [parts per million] CO_2 should guide global limitations and reduction efforts" (Council 1996). The target was based on the 2nd Assessment Report of the IPCC. Although this target was set by the Council, the Commission fully subscribes to it and implements it in its proposals for directives. Insofar, it seems legitimate to take this target as a test case.

What the time management mechanisms of the Commission – or not to mention other institutions like the Council - do not account for, are structural time-lags, which it inherits from external inputs. A particularly striking example is the Intergovernmental Panel on Climate Change (IPCC) which provided the scientific base for the 2° Celsius target. The IPCC provides policy-makers with the scientific knowledge about climate change. It has a rigorous review process in place, which ensures scientific precision. This process takes several years before a new report is released. The work on the 2007 report, for instance, was started as early as in 2002/03 (NZZ 2007). The IPCC only considers peer-reviewed scientific publications in its review, which imply another time-lag: Scientific research works with data it first has to collect and assess. Research findings which are submitted to academic peer-review can easily be one to two years old, the review process takes possibly another year, and consecutively, the review process in the IPCC can take up to 4-5 years. All in all, the IPCC reports work with research findings, which can be 2-8 years old and thereby produce a time-lag external to the Commission's policy development timeframe.

As mentioned above, climate policy developed by the Commission can suffer from an internal time-lag of 1-3 years, a decision-making time-lag of 1-3 years and an implementation time-lag of up to 10 years. On top of it, a scientific time-lag of 2-8 years has to be accounted for in the case of climate policy – and the fact that the decision for the 2° Celsius target is already older than a decade. The 2° Celsius target is therefore potentially outdated by more than two decades.

As a consequence, one leading IPCC scientist (personal conversation 2008) estimates that new scientific findings which are not yet accounted for in the latest IPCC report (2007) indicate that the 2° Celsius target of EU climate policy will produce results which are closer to those results which have been expected for a rise in temperature of 3-4° Celsius. Rather, he claims, the EU would need to strive for a rise in temperature of

1-1.5° Celsius. This is a bias that has emerged from the accumulated time-lags mentioned above.

It should be additionally noted, that external structural time-lags are subject to further dynamics. The European Environmental Agency (EEA), for instance, has noted that many phenomena can have "such long latent periods between first exposures and late effects that 'pipelines' of unstoppable consequences, decades long, were set in place before actions could have been taken to stop further exposures." (EEA 2003: 3) The EEA notes that the time lag between the identification of a problem and regulatory action taken against it can be as long as even a century (ibid : 168). Often, this happened either because early warnings were not taken seriously or knowledge was yet missing (ibid.). Often, risk assessments conducted do not account for the possibility that important factors were outside the scope of the assessment (ibid : 169). Krücken shows that climate change belongs to those instances where early warning was available centuries ago: In 1827, Jean de Fourier explained the greenhouse gas effect as well as the impact of CO_2 for the first time. In 1896, Svante Arrhenius claimed that the greenhouse gas effect is linked to human usage of fossil energy. He also predicted that a doubling of CO_2 emissions would lead to an increase in temperature by 6° Celsius. Hermann Flohn published in 1941 that anthropogenic factors influence the climate. Only from the 1970s onwards, however, was it possible to distinguish the different factors influencing climate from another. (Krücken 1997: 137-43) Already in 1987, the German Metereological Society and the German Society of Physicians warned 2500 journalists, politicians and scientists in 1987, emphasising that the emerging climate change induced by mankind would constitute – "apart from a war with nuclear weapons – one of the biggest threats for mankind" (cited in Krücken 1997: 165). The Intergovernmental Panel on Climate Change was founded in 1988 and was only able to provide convincing arguments for regulatory action in the early 1990s.

The time bias is therefore valid in the case of the 2° Celsius target. Closely linked to this parallax fallacy is the bias on the misrepresentation or underestimation of risk. During the finalisation of the last legislative package on climate change in December 2008, voices from the European Parliament, NGOs and science emphasised that the 2° Celsius target misrepresents and underestimates the risk (for instance: Tällberg Foundation 2008). Schnellnhuber, an IPCC scientist and advisor to the German government, summarizes the criticism as follow: there are more CO_2 emissions than expected, and feedback effects such as formerly unknown dynamics in the ozeans, ice-shelfs and the woods point at a more speedy development than thought before. (ZEIT 2009). Instead of adapting the target to the latest available knowledge, the Commission preferred for political reasons to push the admittedly insufficient yet political possible legislation through (personal conversation with Commission official 2008). It becomes evident that the institutional bias of an underestimation of the risk can be linked to the parallax fallacy of institutional arguing and the focus on the political aspect of the risk.

The 2° Celsius target put in place in 1996 was repeatedly confirmed during the course of the regulatory action taken consequently. However, acknowledgements were made with time that "2°C would already imply significant impacts on ecosystems" (Council 2004). A certain degree of negative impacts is accepted as tolerable. The European Commission refers to the target in various documents, for instance in its Communication "Winning the Battle Against Climate Change (Commission 2005). The Commission translated the degree target into concrete emission targets of CO_2 emission in parts per million (ppm) of under 550 ppm.

The Communication argues on the basis of scientific evidence that the costs of abatement are lower than the costs of the consequences of climate change if the 2° Celsius target is achieved. This argumentation clearly is a cost-benefit analysis of risks – it does not aim at reducing the risks as much as possible but it aims at reducing the risks to a cost-efficient minimum. The 2° Celsius target accepts certain consequences and would like to avoid other more extreme, less controllable ones.

The Commission has been very transparent in setting out the risks a 2° Celsius target would like to avoid and is willing to take (Commission 2005). It is obvious, that the 2° Celsius target was subject to impact assessments and expert consultations. The document recognises that an increase of average temperature of 2.5° Celsius could lead to "50 million additional people at risk of hunger" (ibid.). Such a risk calculus implicitly implies that a lower number of additional people experiencing food scarcity as tolerable. A 1 to 2° Celsius increase of average temperature will result in up to 15 to 20% of ecosystem areas worldwide to shift and a severe loss of biodiversity is expected. Whereas this risk is accepted with a 2° Celsius target, the consequences of higher temperatures are considered to be intolerable: global losses of up to 10% of coastal wetlands, large losses of species and biosystems (ibid.). With an increase of 2 to 2.5° Celsius compared to pre-industrial levels, additional 2.4 to 3.1 billion people will suffer from water stress induced by scarcity of water resources, water supply and quality (ibid.). A risk calculus which aims at less than 2° Celsius increase therefore still accepts additional people to be under increased water stress. An increase of 1.4° Celsius will increase the risk of coastal floods so that an additional 10 million people are at risk. Whereas this risk is accepted, a risk for 80 million people as expected for a rise of 3.2° Celsius is considered to be too high (ibid.). The Communication acknowledges that some "climate feedbacks that strongly accelerate climate change by exceeding specific temperature thresholds" which may lead to "irreversible changes to the climate system, or result in sudden and rapid exacerbation of certain impacts requiring unachievable rates of adaptation" (ibid.) might be accepted by the 2° Celsius target.

The presumably controllable probability attached to the potential changes might in the eyes of many not be outweighed by the potential impacts of climate change. Insofar, the Commission follows a risk management strategy that might be attributed to the second claim of a misrepresentation of risk. It becomes evident that the 2° Celsius target is a risk management strategy, not so much a risk avoidance strategy. The target

knowingly accepts a high level of risk for some regional areas and tolerates significant changes of the global biosystems. This confirms the assumption made above that the Commission makes normatively contestable risk estimations and proposed a risk management strategy which is not value-free but rather based at least partly on political decisions.

Conclusion

This paper has outlined different institutional biases of the Commission in its time, risk and knowledge management: Six institutional biases to risk assessment and management can and do emerge within the Commission: 1) a misrepresentation or underestimation of risk, 2) an unrepresentative estimation of risks, 3) normatively contestable estimations of risk, 4) an institutionally or functionally limited view on risk, 5) a blurred focus on the political aspect of the risk due to risk transformation, and 6) a time-lag in the risk calculations.

It is evident that some of the institutional biases cannot be solved. Possibly, they should not be solved. It can be positive that risks are politicised and decided upon in a deliberation. A political process will leave winners and losers behind which in general can be compensated with the same or another decision. It can also be positive that an institution follows its fragmented logic. This paper did not attempt to make a normative judgement whether the institutional biases, which are linked to political deliberations, are good or bad. The paper only attempted to show that in the distribution of 'bads' by the Commission, that is of risks, institutional parallax fallacies exist.

This paper was not able nor did it aim at establishing reliable cause-effect relationships. It attempted to provide an illustration of some potential pitfalls in EU policy making. As this edition is intended to primarily inform young researchers, this paper hopes to be able to encourage more 'young' research in the black box Commission, the EU's legislative initiator. The paper has pointed at six parallax fallacies, which can serve as a starting point for validation research and further thinking. Nota bene, it might well be that further research is able to point additional parallax fallacies, linked to, for example, the policy-making process. One instance could be the impact of internal decision-informing procedures of the Commission, where scientific insights into risks are increasingly summarized and reduced in complexity for the rushed elite at the higher levels of hierarchy.

The author would like to thank two anonymous interviewees (a high-ranking Commission official and an IPCC lead author) with whom he was in contact in December 2008.

Bibliographie

Beck, Ulrich (1999): World Risk Society, Polity, Malden

Beck, Ulrich (1998): Politics of Risk Society, in: Franklin, J. (ed.): The Politics of Risk Society, Polity Press, Cambridge

Beck, Ulrich (1995): Ecological Politics in an Age of Risk, Polity Press, Cambridge

Beck, Ulrich (1992): Risk Society: Towards a New Modernity. Sage, London

Bulkeley, Harriet (2001): Governing climate change: the politics of risk society?, Transactions of the Institute of British Geographers, (26) 2001

Caldwell, Lynton K. (1996): Science Assumptions and Misplaced Certainty in Natural Resources and Environmental Problem Solving, in: Lemons, John (ed.): Scientific Uncertainty and Environmental Problem Solving, Blackwell Science, Cambridge MA

Council of Ministers (2004), Minutes of the 2610th Council Meeting, Luxemburg, 14 October 2004, document 13531/04

Council of Ministers (1996), Minutes of the 1939th Council Meeting, Luxembourg, 25 June 1996, document 8518/96

Dreger, Jonas (2008): The influence of environmental NGOs on the emergence of the EU's emission trading scheme directive. An application of the advocacy coalition framework, Master Thesis, College of Europe, Bruges

Ekman, Bo; Rockström, Johan and Wijkman, Anders (2008): Grasping the climate crisis, Tällberg Foundation, Brussels, December 2008

European Commission (2000a): communication from the Commission on the precautionary principle, COM (2000) 1, Brussels, 02 February 2000

European Commission (2000b): Commission working document: Science, society and the citizen in Europe, SEC (2000) 1973, Brussels 14 November 2000

European Commission (2001a): Report of the (Liberatore) Working Group "Democratising Expertise and Establishing Scientific Reference Systems" in preparation of the White Paper on Governance, Brussels, 02 July 2001

European Commission (2001b): European Governance – a white paper, COM (2001) 428, Brussels 25 July 2001

European Commission (2002): Communication from the Commission on Impact Assessment, COM (2002) 276 final, Brussels 5 June 2002

European Commission (2003): Collection and Use of Expertise by the Commission: Principles and Guidelines – "Improving the knowledge base for better policies", Brussels 2003

European Commission (2005): "Winning the Battle Against Climate Change", Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions, COM(2005) 35 final, Brussels, 09 February 2005

European Council (2000): Presidency Conclusions, Nice European Council Meeting, 7-9 December 2000

Ewald, F. (1991): Insurance and Risk, in: Burchell, G., Gordon, C. and Miller, P. (eds.): The Foucault Effect: Studies in Governmentality, Harvester Wheatsheaf, London

Goetz, Klaus H. and Meyer-Sahling, Jan-Hinrik (2009): Political time in the EU: dimensions, perspectives, theories, in: Journal of European Public Policy 16(2)

Harremoës, Poul, Gee, David, MacGarvin, Malcolm, Guedes Vaz, Sofia et.al. (eds.) (2001): Late lessons from early warnings: the precautionary principle 1896-2000, European Environmental Agency: Environmental issue report 22, Luxemburg

Héretier, A. and Farrell, H. (2004): Interorganizational negotiation and intraorganizational power in shared decision making: early agreement under codecision and their impact on the European Parliament and Council, in: Comparative Political Studies 37(10)

Héretier, A. (2007): Explaining Institutional Change in Europe, Oxford University Press, Oxford

Heclo, Hugh (1974): Modern Social Politics in Britain and Sweden, Yale University Press, New Haven

Hull, Robert (1993): Lobbying Brussels: A View from Within, in: Mazey, Sonia and Richardson, Jeremy: Lobbying in the European Community, Oxford University Press, Oxford

Japp, Klaus P. and Kusche, Isabel (2008): Systems Theory and Risk, in: Zinn, Jens O. (ed.): Social Theories of Risk and Uncertainty: An Introduction, Blackwell Publishing, Oxford

Kovats, L. (2009): Do elections set the pace? A quantitative assessment of the timing of European legislation, in: Journal of European Public Policy 16(2)

Krücken, Georg (1997): Risikotransformation – Die politische Regulierung technisch-ökologischer Gefahren in der Risikogesellschaft, Westdeutscher Verlag, Opladen

Luhmann, Niklas (1993): Risk: A Sociological Theory, A. de Gruyter, New York

Mahoney, Christine (2008): Brussels Versus the Beltway: Advocacy in the United States and the European Union, Georgetown University Press, Washington

Mythen, Gabe (2004): Ulrich Beck – a critical introduction to the risk society, Pluto Press, London

O'Malley, Pat (2008): Governmentality and Risk, in: Zinn, Jens O. (ed.): Social Theories of Risk and Uncertainty: An Introduction, Blackwell Publishing, Oxford

Starr, C. (1969): Social benefits versus technological risk. Science 165

Tholoniat, Luc (2009): The temporal constitution of the European Commission: a timely investigation, Journal of European Public Policy 16(2)

Wettestad, Jorgen (2005): The Making of the 2003 Emissions Trading Directive: An Ultra-Quick Process due to Entrepreneurial Proficiency?, Global Environmental Politics 5(1)

Zinn, Jens O. (2008a): Risk Society and Reflexive Modernization, in: Zinn, Jens O. (ed.): Social Theories of Risk and Uncertainty: An Introduction, Blackwell Publishing, Oxford 2008

Zinn, Jens O. (2008b): A Comparison of Sociological Theorizing on Risk and Uncertainty, in: Zinn, Jens O. (ed.): Social Theories of Risk and Uncertainty: An Introduction, Blackwell Publishing, Oxford

Internet Sources and newspaper articles

Homepage of the European Commission, Statistics on the Codecision Procedure: http://ec.europa.eu/codecision/institutional/analysis/codecision_stat_en.pdf, retrieved 07.04.2009

Fischlin, Andreas: Die Arbeit im Intergovernmental Panel on Climate Change – Klimaforschung und die schwierige Suche nach einem politisch belastbaren Konsens, Neue Züricher Zeitung, Nr. 265, 14 November 2007

Schellnhuber, Hans Joachim: Klimawandel - Manchmal könnte ich schreien, Die Zeit, Nr.14, 26 March 2009